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PROPULSION GROUP CHAIRMAN'S INTERIM REPORT

Re: M/V Taki-Tooo, Tillamook, Oregon, June 14, 2003
NTSB Accident file: DCA03MM035

The propulsion group's on-site investigation began on Sunday, June 15, about 1000. The group consisted of the group chairman from the NTSB Anchorage Regional Office, a chief warrant officer from the United States Coast Guard, and a deputy sheriff from the Tillamook County Sheriff's Office. All members of the group were present.

The vessel "Taki-Tooo" was on a sandy beach, resting upright, principally on its keel, with a port list. The vessel was positioned slightly above the high tide line, about 200 feet from the shore, approximately due east of the opening in the jetties defining the approach to the Tillamook Bay Bar.

An inspection of the vessel, with an emphasis on propulsion and steerage components, disclosed the following:

The flybridge was not present, and according to a group member, had been swept off during the accident sequence. Bare cables (no control handles, no control pedestal) for the upper helm station's engine and transmission controls were exposed and draped over the starboard side of the lower helm station's cabin. There were no steering components remaining where the upper helm station had been.

The rudder and rudderpost appeared to be solidly mounted and undamaged. The rudderpost had yellow plastic police crime scene barrier tape captured along its length.

The four–bladed, 26-inch diameter, 22.6 pitch, bronze propeller was mostly buried in beach sand. The sand was removed, and the propeller was seen to be mounted solidly on the shaft and keyway, with the retaining follower present and snug. All four of the propeller's blade tips were uniformly bent. The bends were nearly perpendicular to the faces of the blades, with the tip of the blades bent forward, towards the bow of the boat. Each bend was nearly symmetrical along the tip radius of each blade. The bent portion of the blades measured approximately ½inch. Each propeller blade face was brightly burnished for about a 3" length, measuring from the tip of the blades towards the hub.

The 1-3/8 inch diameter propeller/engine shaft was straight and unremarkable. It exited directly from the keel skeg without a support strut.

A limited interior examination, pending removal of the vessel to a storage yard, was initiated.

The engine compartment was partially filled with sand. The single, 6-cylinder John Deere 250-horsepower turbocharged diesel engine was intact, with no signs of oil leaks, or any obvious indicator of a catastrophic failure (i.e., no engine case or turbocharger penetrations). All fuel lines, fittings, and linkages were intact and attached. The throttle and transmissions control were manipulated at the lower helm station, and they moved the engine throttle linkage throughout its range, and selected forward, neutral, and reverse on the transmission.

The stub shaft from the engine to the transmission, and the drive shaft from the transmission to the propeller, were all mated at their respective companion flanges and were undistorted.

The vessel was moved about 1830 on June 15, to a site on the grounds of the Tillamook County Justice facility, 5995 Long Prairie Road, Tillamook. The vessel was moved about 200 yards by dragging it across the sandy beach using a truck-powered winch. The vessel's hull left a "V" shaped gouge mark, about 2 feet deep, and 3 feet wide, in the sand. It was then loaded onto a flat bed truck by cranes, and trucked to the Long Prairie location.

All group members reconvened on June 16, and conducted further inspections of the vessel. The inspections disclosed the following:

Sand filled much of the bilge section, and portions were removed from the engine compartment and cabin of the vessel to facilitate inspection.

The propeller was rotated, and the propeller drive shaft was observed to rotate sympathetically along its entire length. Prior to the rotation, previously noted yellow plastic police barrier tape was removed from the propeller. No other material was present on the propeller or shaft.

The rudder was moved from stop to stop. It was moved by grasping the external rudder and applying force. The movement was uniformly stiff throughout its travel. Prior to moving the rudder, yellow plastic police barrier tape was removed from the rudderpost. Also removed from the rudderpost was about 18-inches of approximately ¼ inch diameter braided rope. The rope was frangible and partially decomposed.

The engine was mounted solidly on its mounts and mounting rails. The transmission was similarly mounted.

The two, 150-gallon capacity fuel tanks were securely mounted near the stern of the boat. There was no evidence the tanks had been breached. All fuel lines were connected at the tanks and the engine, with no penetration or breach. The Racor fuel strainer filter appeared clean, and the clear plastic sediment bowl of the filter disclosed no visible particulate contaminants, or water.

The vessel was equipped with one bilge pump, manufactured by Peters and Russell. It is a 12-volt, belt-driven, bellows type. It was connected to a three-way manifold valve, with bilge pickups located in the lazarette, engine compartment, and bow (under the cabin floor). The bilge pump can be directed to suck fluids from the lazarette, engine compartment, or bow, but only one compartment can be selected at a time. At the time of inspection, it was selected to the lazarette. All three of the bilge pickup hoses were connected to the manifold. The bow pickup appeared to be damaged or deteriorated, and did not have a strainer on the end of the hose. The strainer could not be located in the sand that occupied much of the vessel's bilge. The remaining two compartment's bilge hoses were intact with unobstructed strainers at their pickup ends. The bilge pump was removed as found, and attached to an independent 12-volt power source. The pump ran immediately and rapidly, with a small amount of water exiting from the discharge side of the pump.

Two high water bilge alarm switches were located; one in the engine compartment, and one in the lazarette. Both switches were still connected to their respective bilge alarm wiring. For testing, both ends of the wires were cut; the switches cleaned of sand, and left in place. A continuity tester was used to determine continuity when the float-type switches were raised. Both switches displayed continuity when the floats were raised.

The lower helm station wheel was turned rapidly in both directions for several revolutions. It turned freely, and discharged power steering-like red fluid from a breach in the line going from the hydraulic pump connected to the wheel, to an area in the cabin roof, near where the flybridge separated.

Electrical fuses in the cabin located behind the lower helm station were intact. Several were filled with water.

The weak link to the lifeboat painter had separated as designed.

The group did not discover any evidence of any preaccident mechanical malfunction during the inspections of the propulsion and steering mechanisms.

<u>Vessel Specifications taken from USCG logs and other documentation</u>

USCG Documentation: 579874

Manufacturer: Modutech Marine, February 1977

Hull length and beam: 35.8 by 12.33 feet (excludes rub rails)

Gross tons: 14.92

Engine: John Deere, 6-cylinder turbocharged. Serial/Identification numbers:
DENSO RE71552 NDPES6NB120C720RND325 09200-32501
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